Managing Home Directories

Session 604

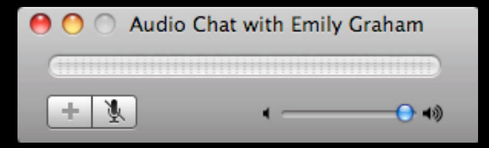
These are confidential sessions—please refrain from streaming, blogging, or taking pictures.

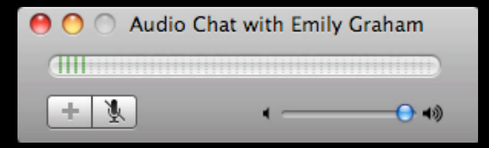
Home Directory Concepts

Tony Graham
Systems Engineer

Home Directory Concepts

Tony Harmon
Systems Engineer


Audio Chat with Emily Graham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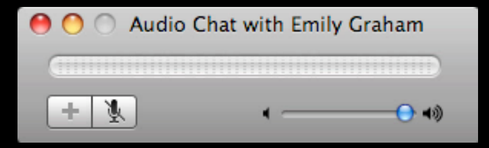
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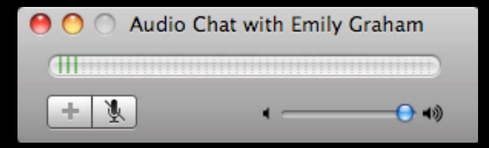
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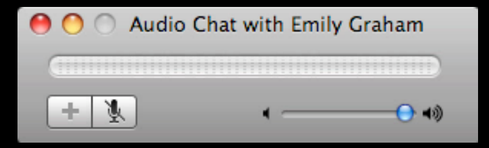
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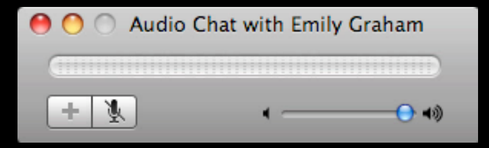
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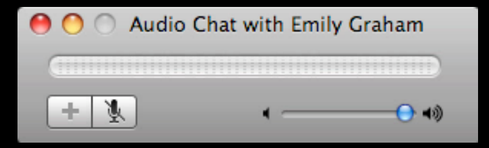
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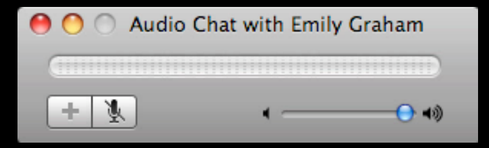
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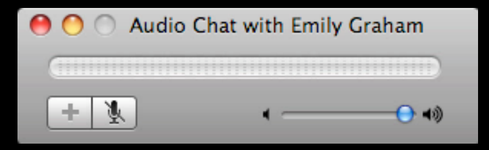
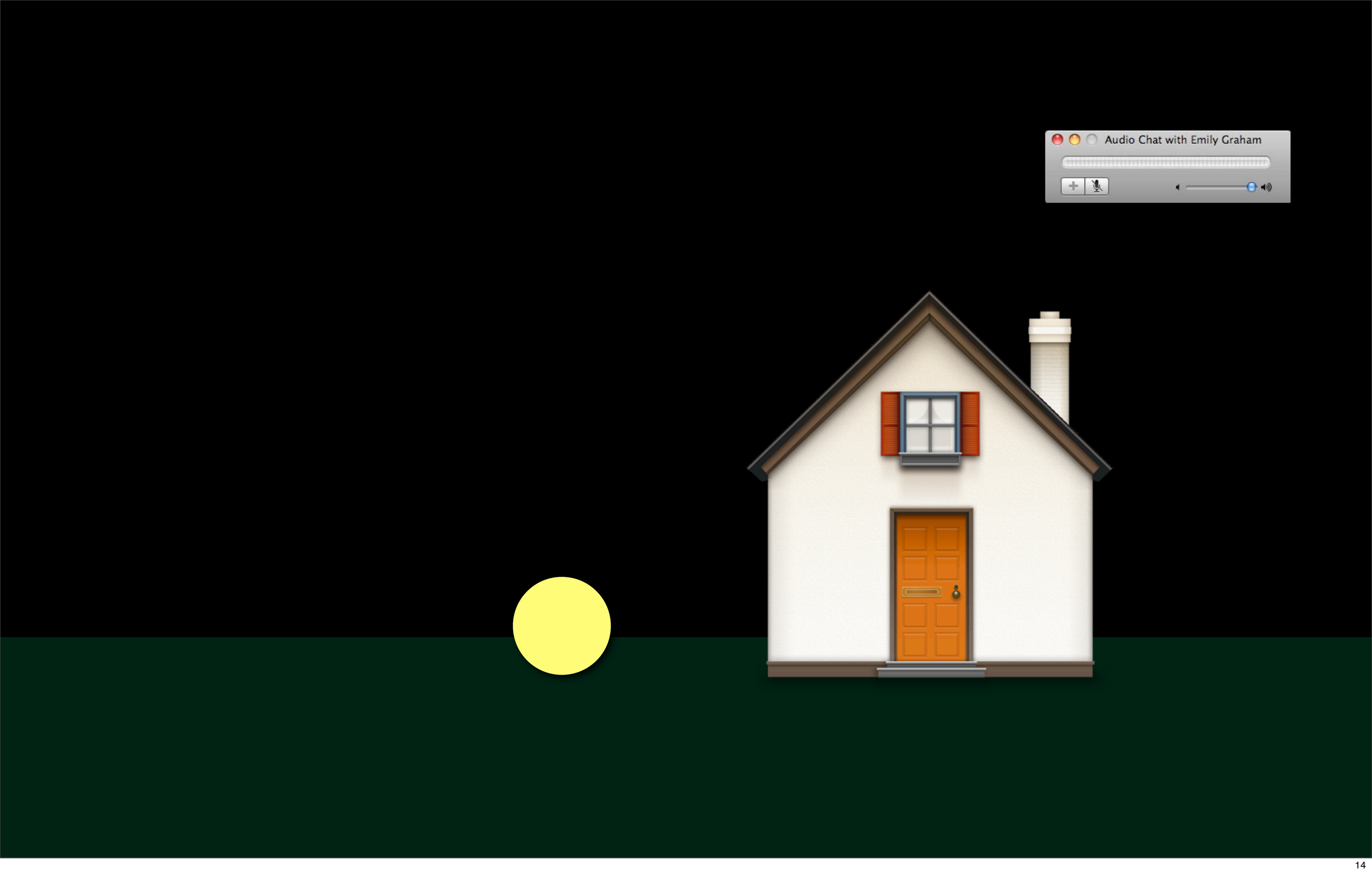


There's no place like
NFSHomeDirectory: /Users/goldiedots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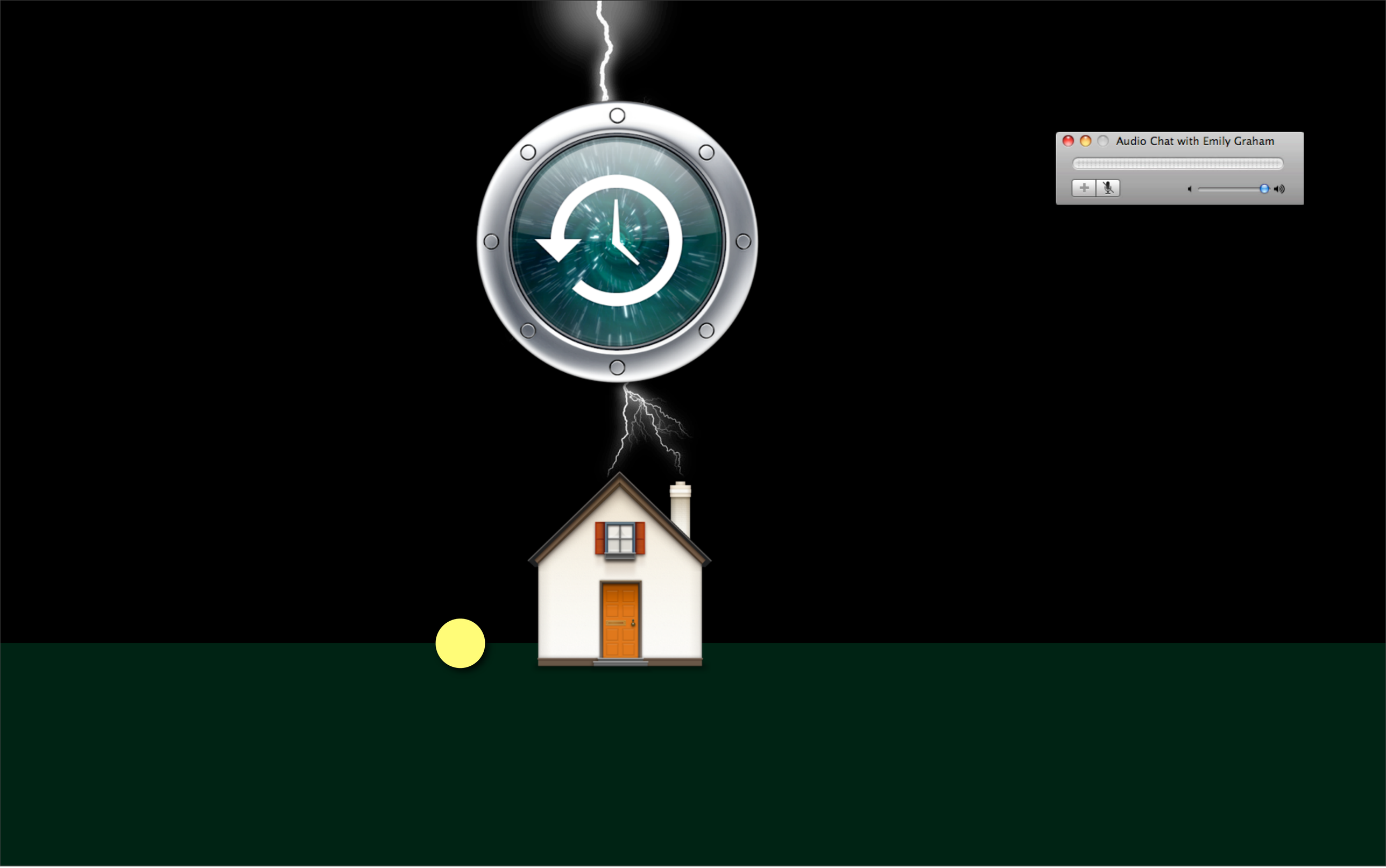
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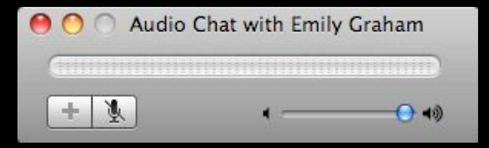
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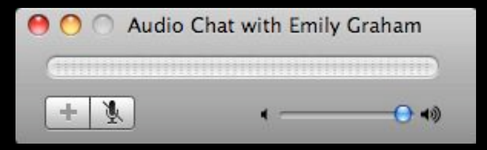
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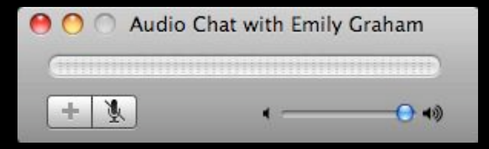
Guest Motel
Hourly Rates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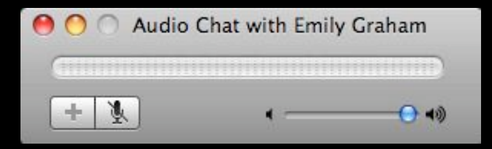
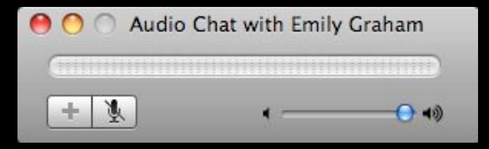
HomeDirectory:
<home_dir><url>afp://
mini.example.com/Users</
url><path>goldiedots</path></home_dir>
NFSHomeDirectory: /Network/Servers/
mini.example.com/Volumes/Storage/
Users/goldiedots

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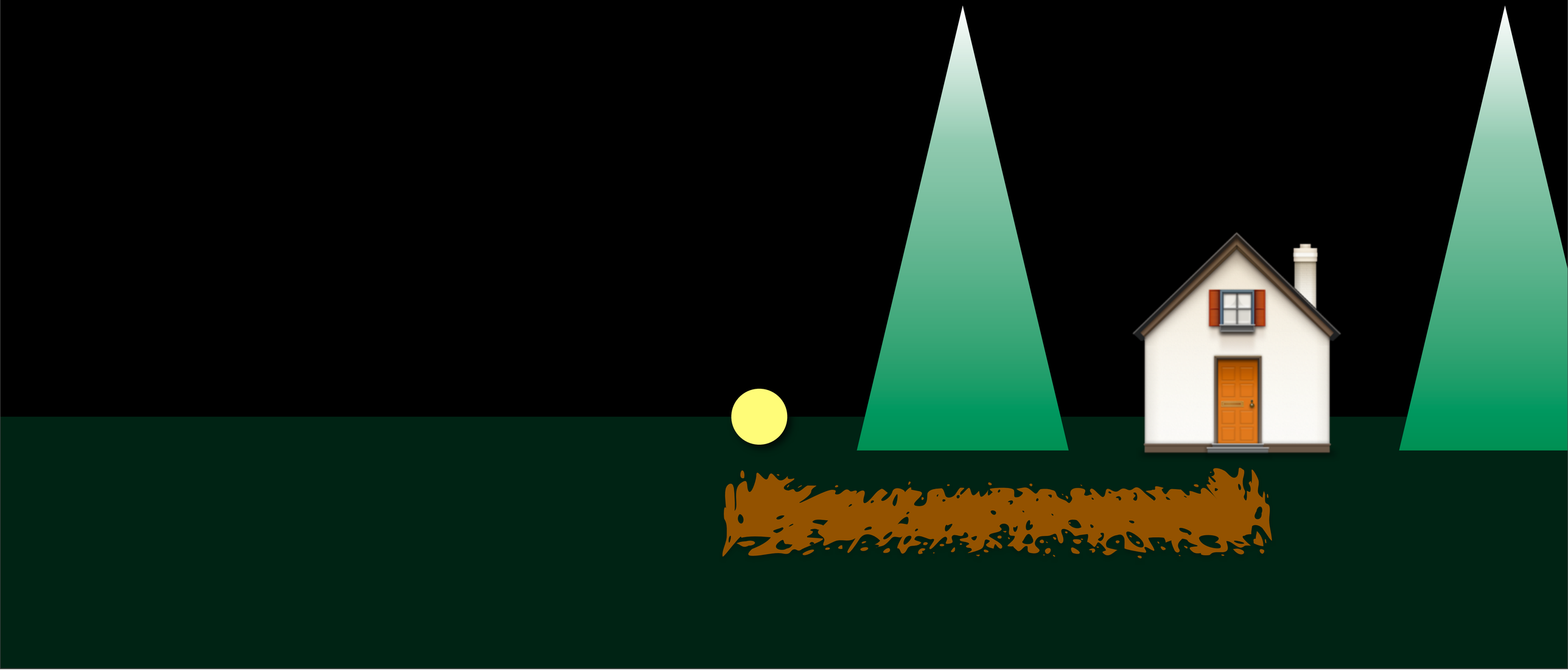

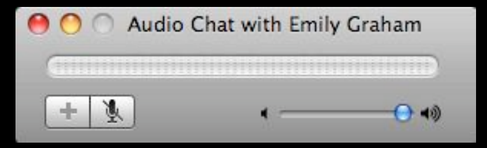
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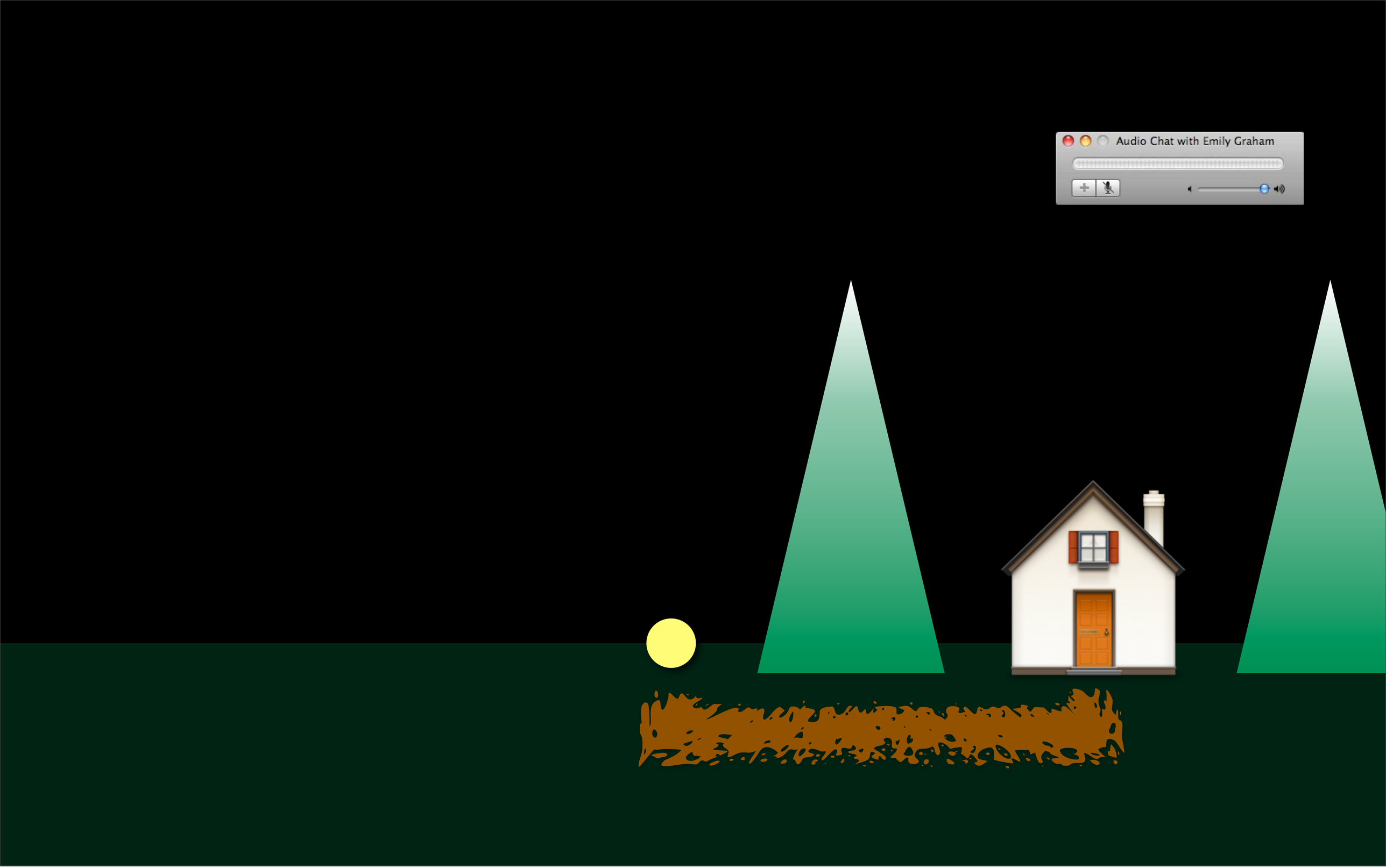

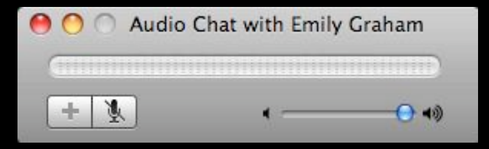
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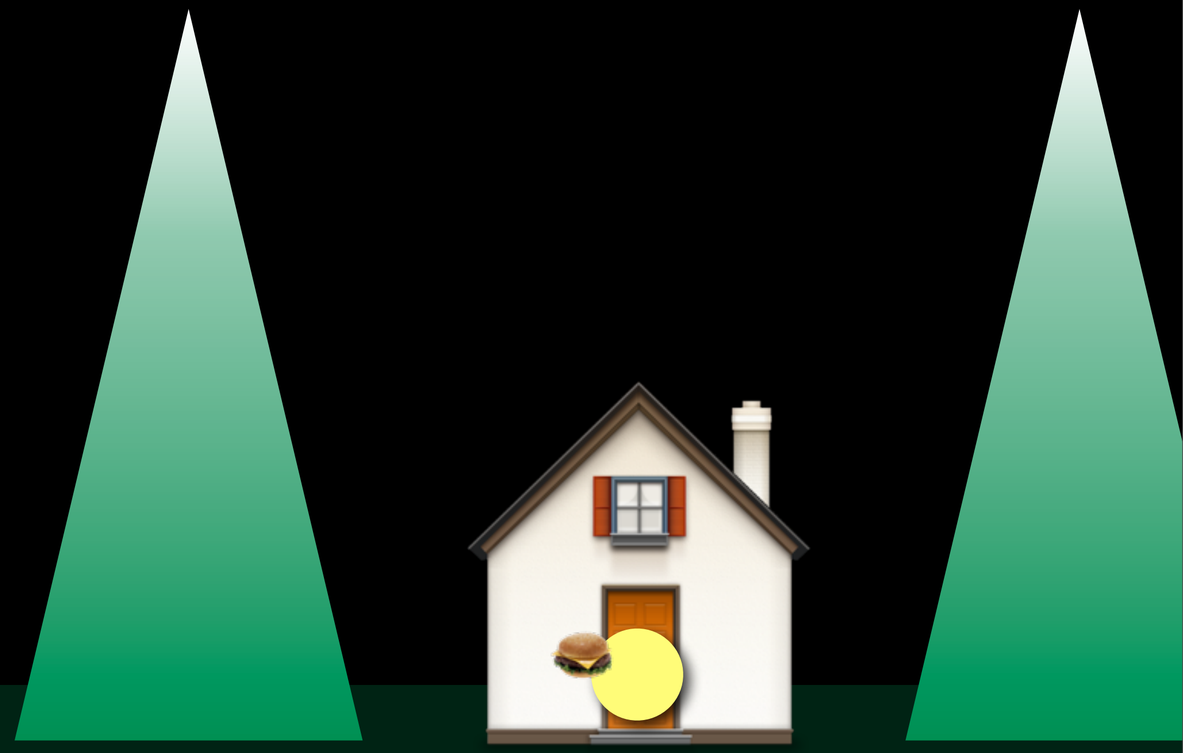

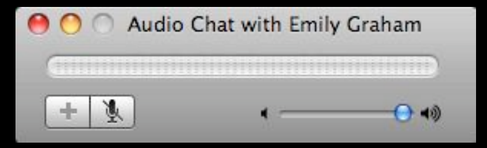
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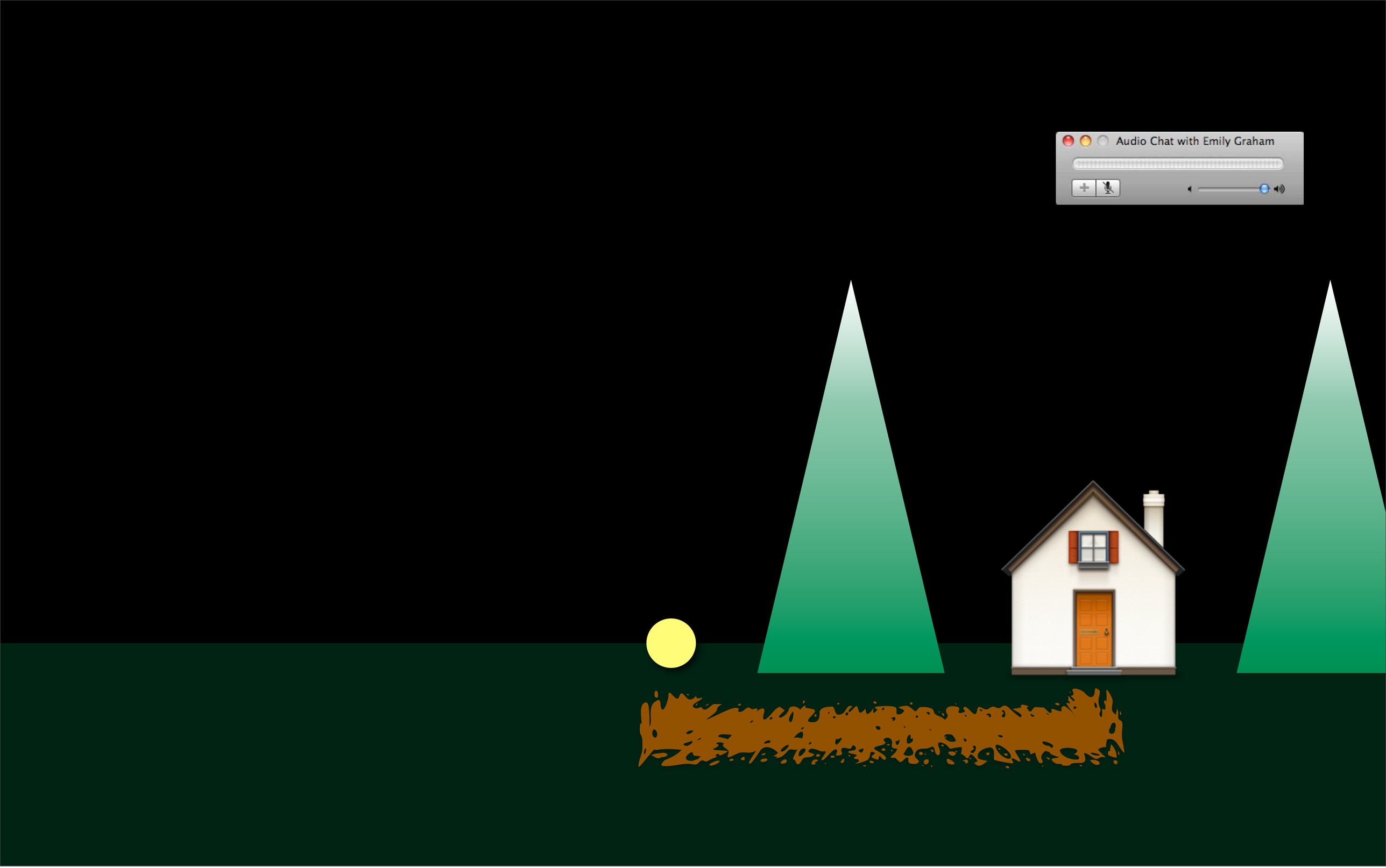
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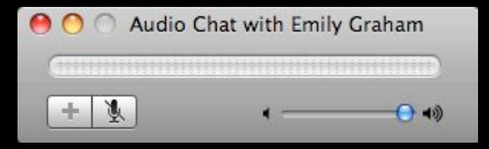
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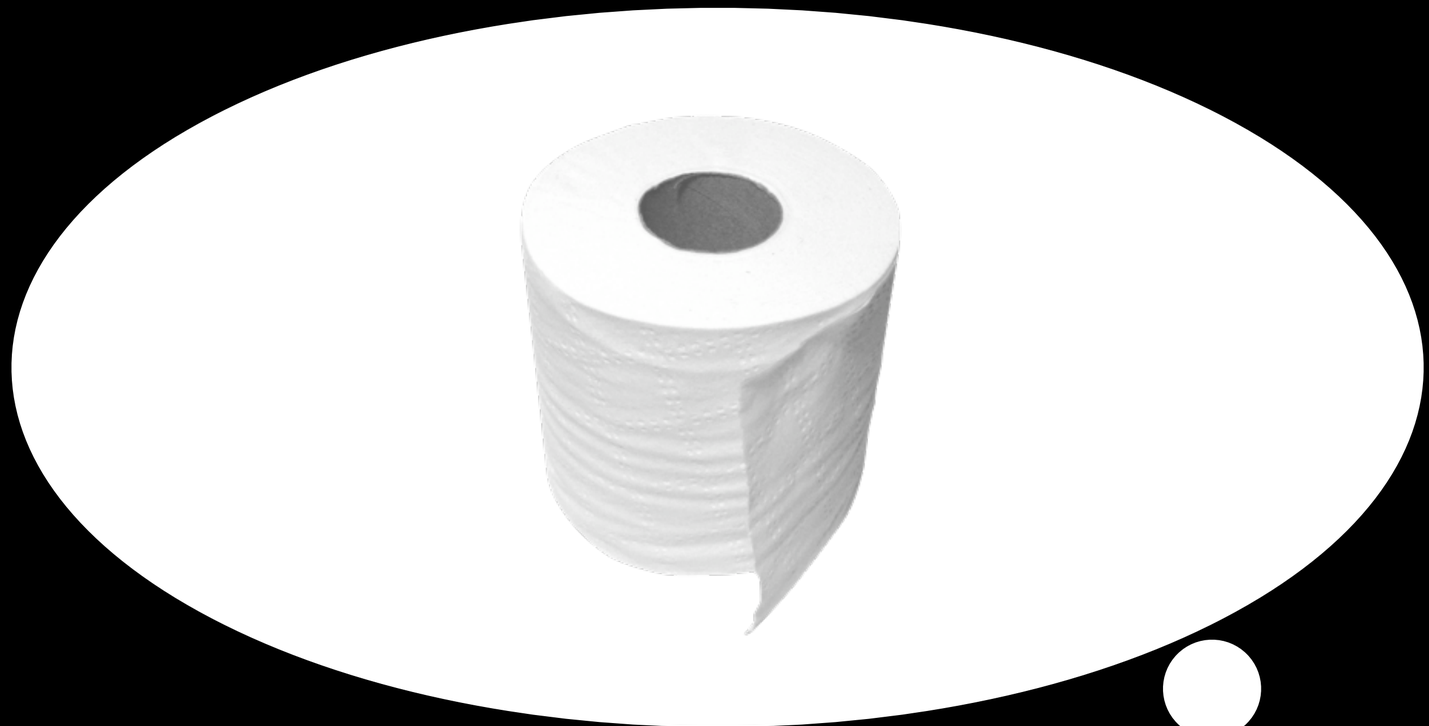

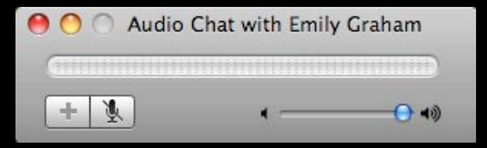
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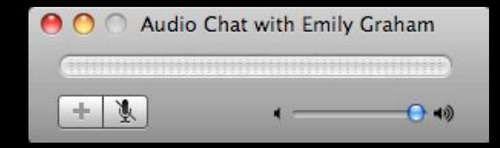
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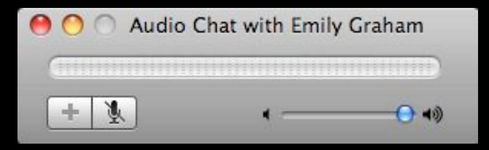
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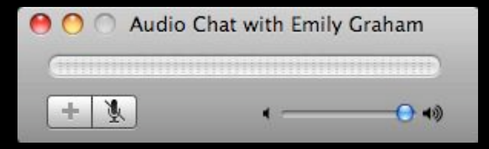
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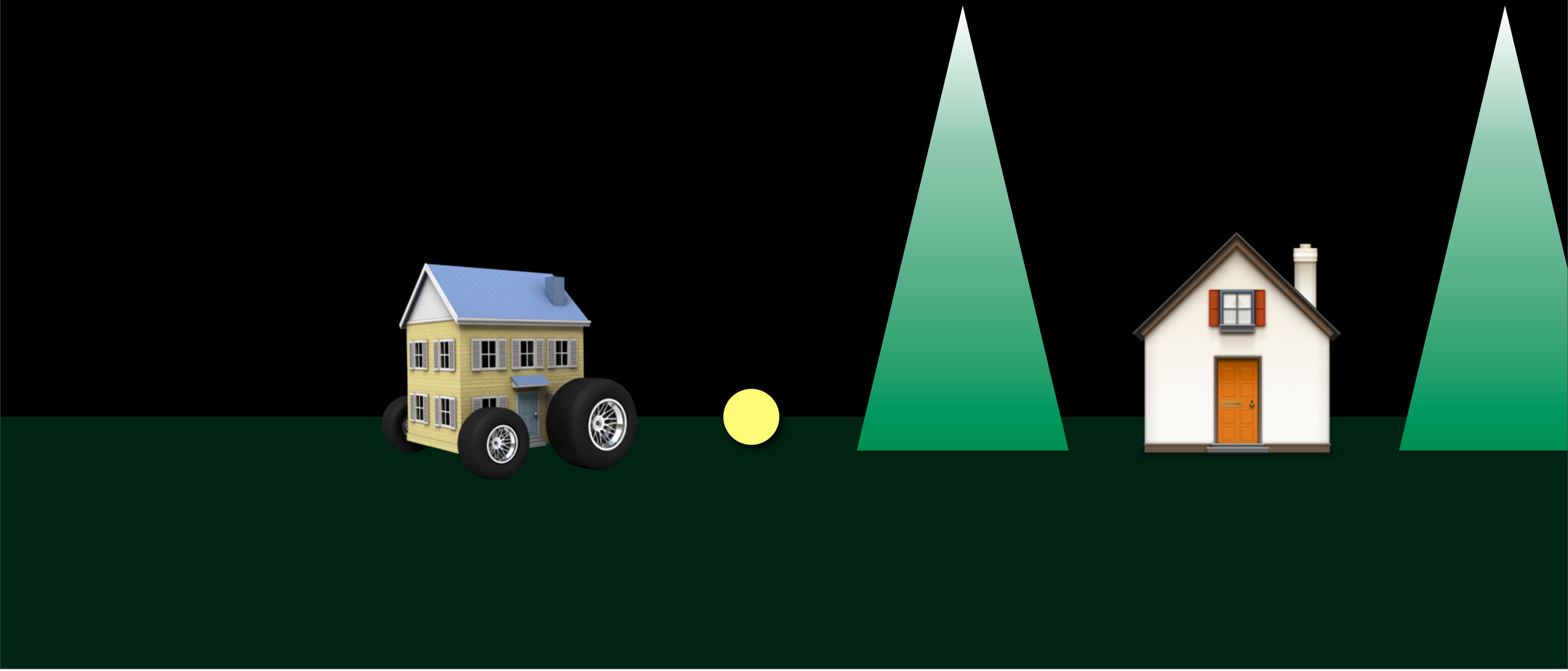
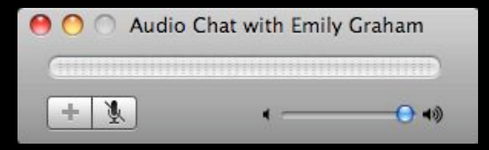
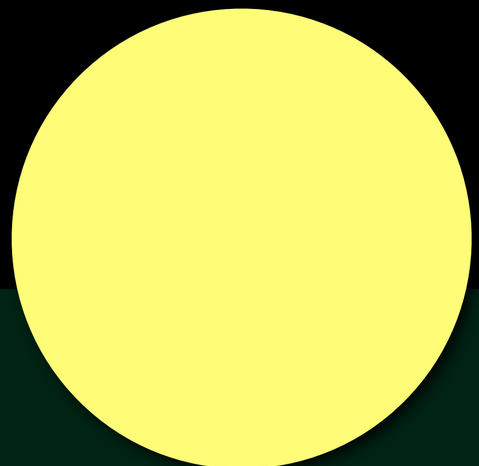
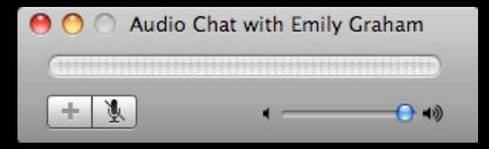


So, what are you doing this weekend?



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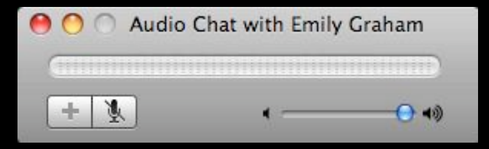
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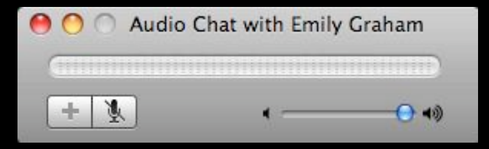
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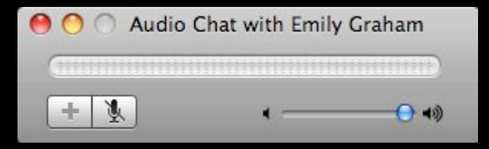
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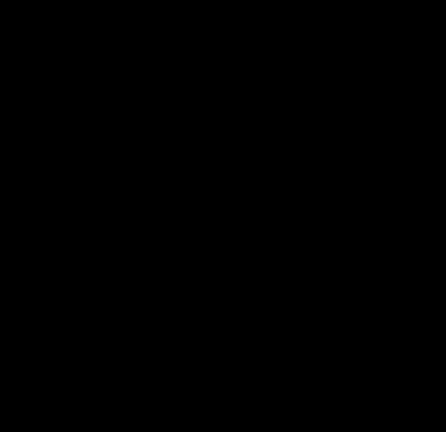

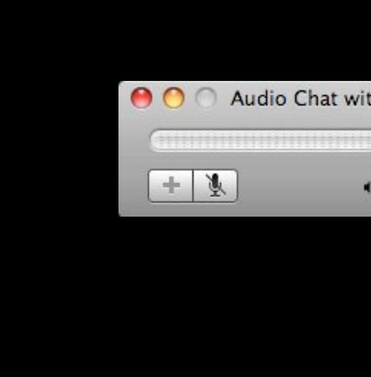

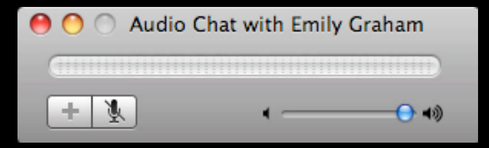
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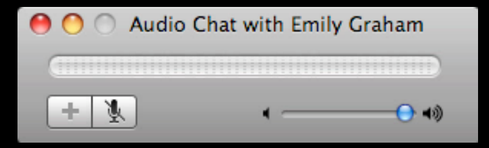
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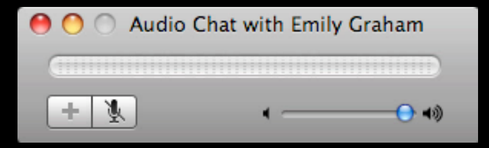
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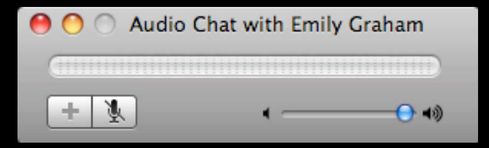
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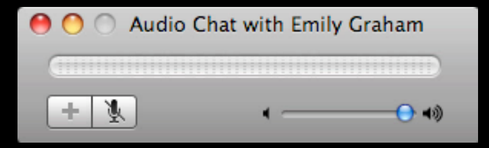
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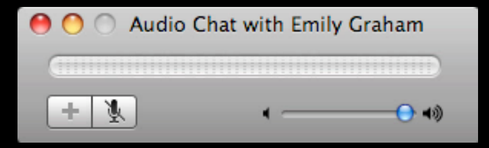
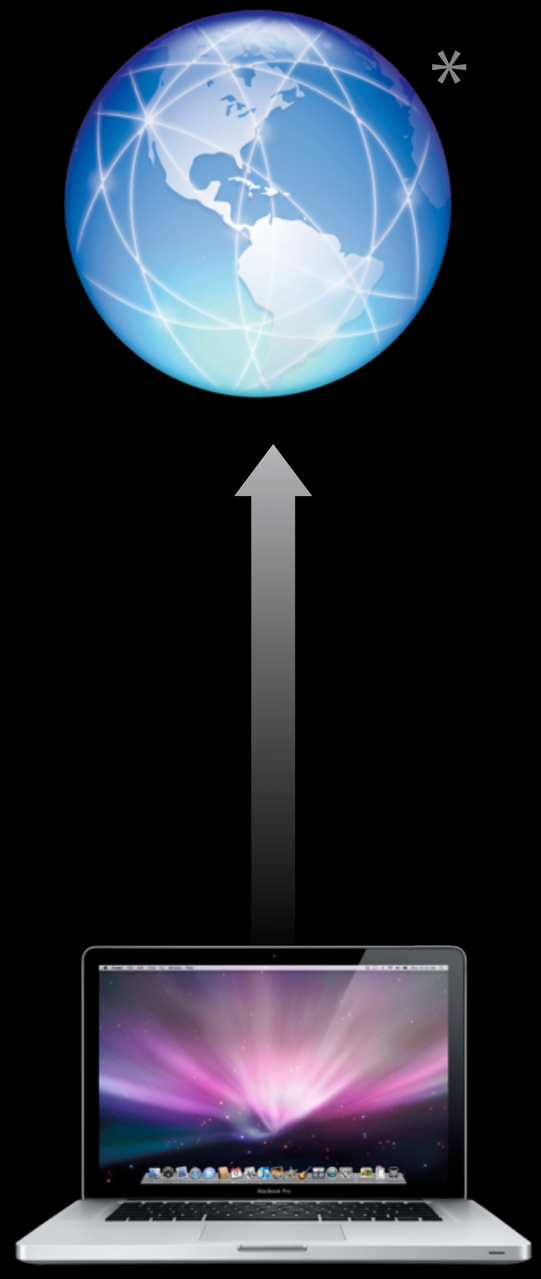

Audio Chat with Emily Graham

Local Home

- Defaults to /Users
- Pros
  - Easy (default)
  - Tested
  - Uniform
- Cons
  - No separation between OS and user data
  - All user data located on one hard disk mechanism
- Backups
  - Time Machine, other backup software

Guest

- No password, nonadministrator
- Home folder built from /System/Library/User Template
- Can modify the template, but the smarter way is to use computer lists with workgroup manager
- Home folder deleted on logout



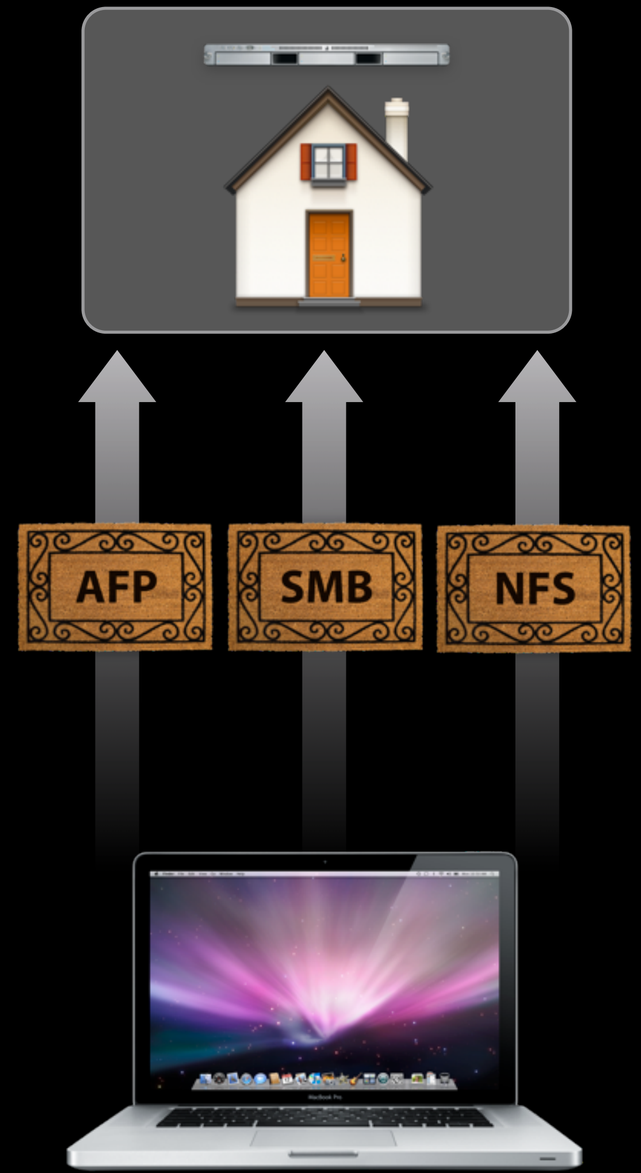
* not to scale

Network Home

- AFP, SMB, NFS
  - User data used live over the network
- Pros
  - Home available from any connected Mac
- Cons
  - Performance
  - Requires network
- Backup
  - Server-side

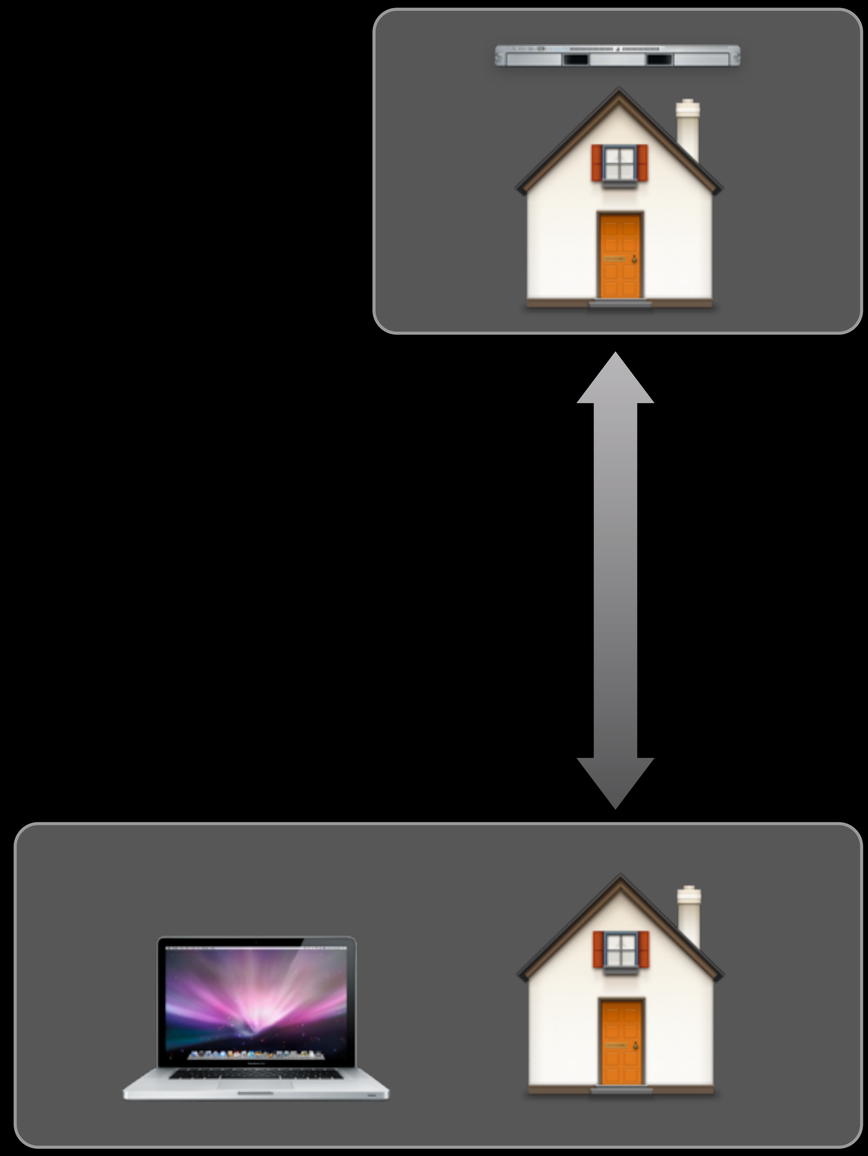
Network Protocols

- AFP better for Mac clients and servers
- SMB often better for Windows servers
- NFS has security implications



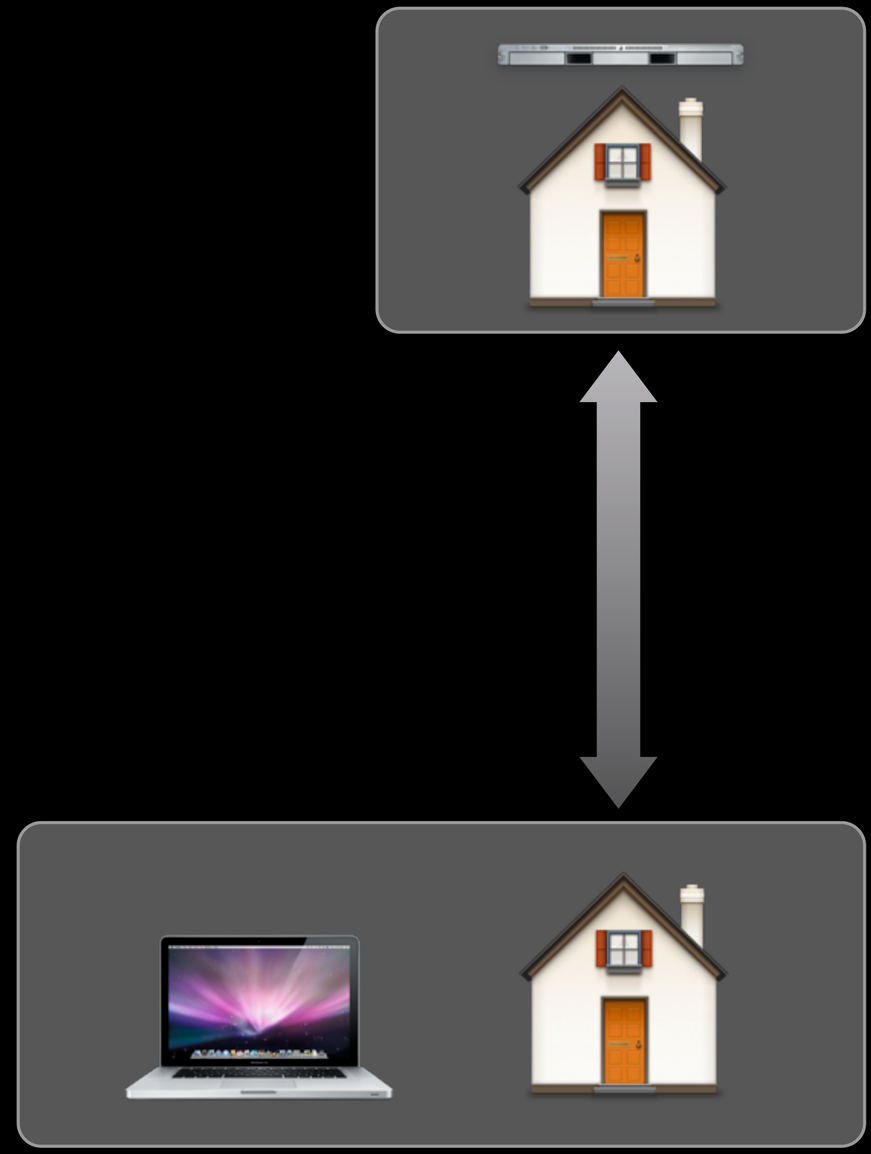
Mobile Accounts

- Local home directory
- Synchronized user records
  - Passwords
  - Management



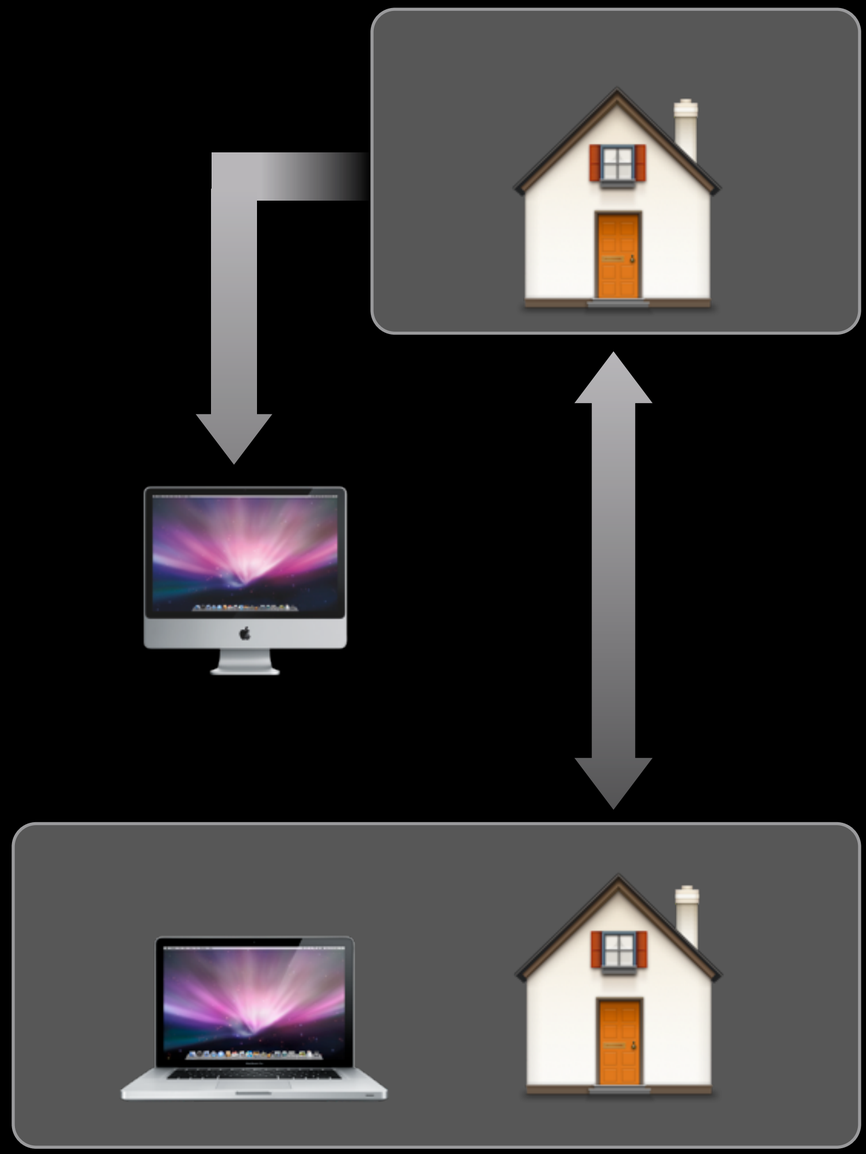
Portable Home

- Local home and network home
- Mobile Account with synchronized home directory
- Pros
  - Can be used offline
- Cons
  - Conflict resolution
- Backup
  - Server-side and/or client-side



Network + Portable

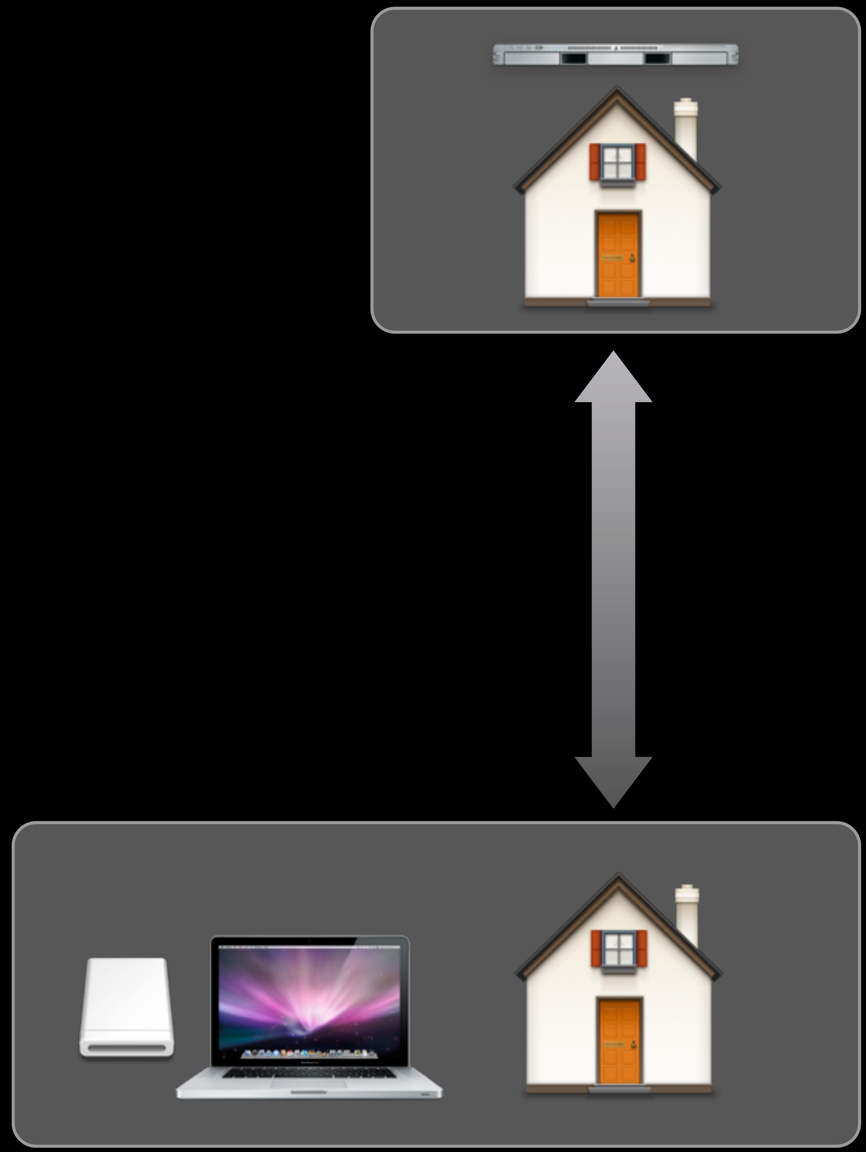
- Use both network and portable home
- Desktop user with occasional portable use
- Portable user with occasional desktop use
- Professor at desk vs. classroom



External

- Portable home on external drive or Target Disk Mode
- Reduces login sync
- Can move to unmanaged "Home Mac"
- FileVault optional
- Controlled via Managed Preferences
- External drive, can be USB or FireWire
  - Now can be FAT-formatted (Snow Leopard)

New



Demonstration:
External Administrator Account

“I’m standing here beside myself”

Advanced Home Directory Concepts

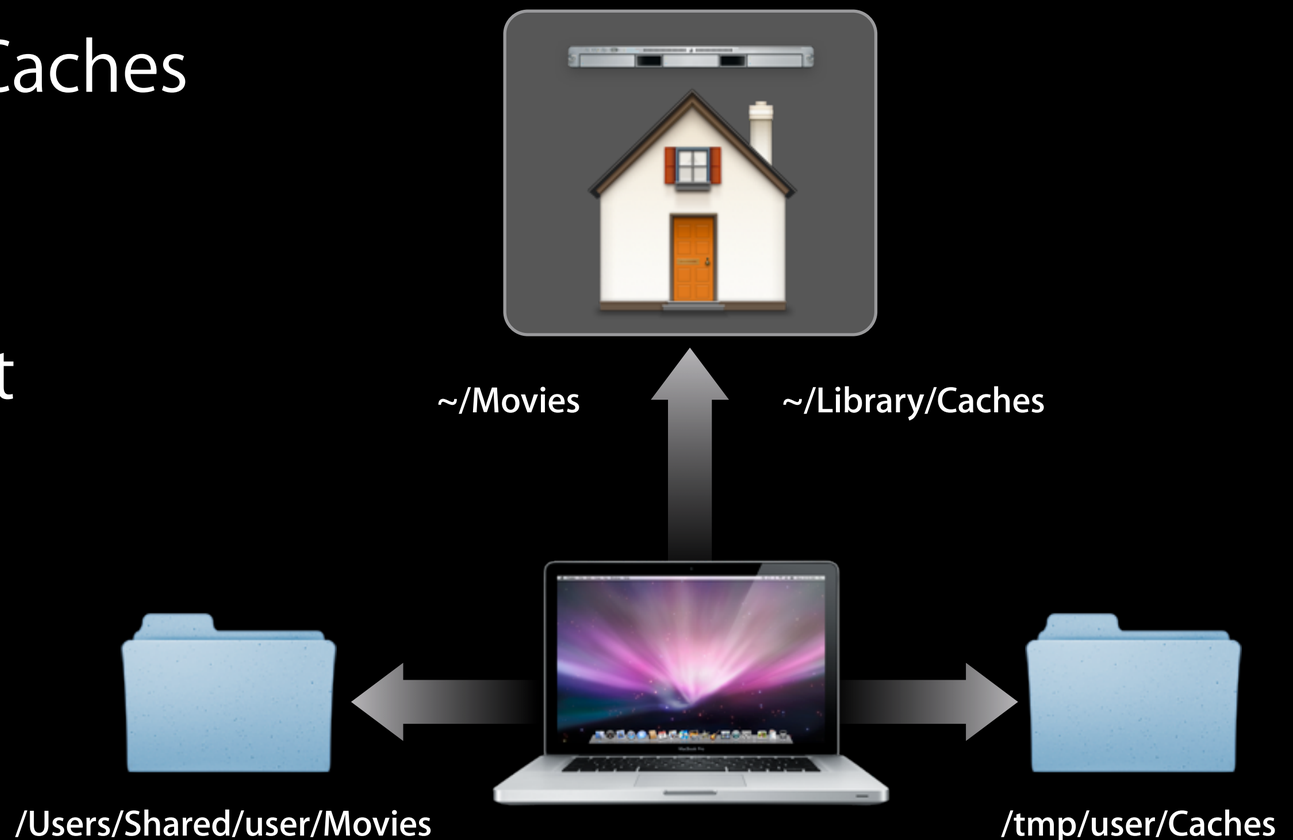
Armin Briegel
Consulting Engineer

Advanced Home Directory Concepts

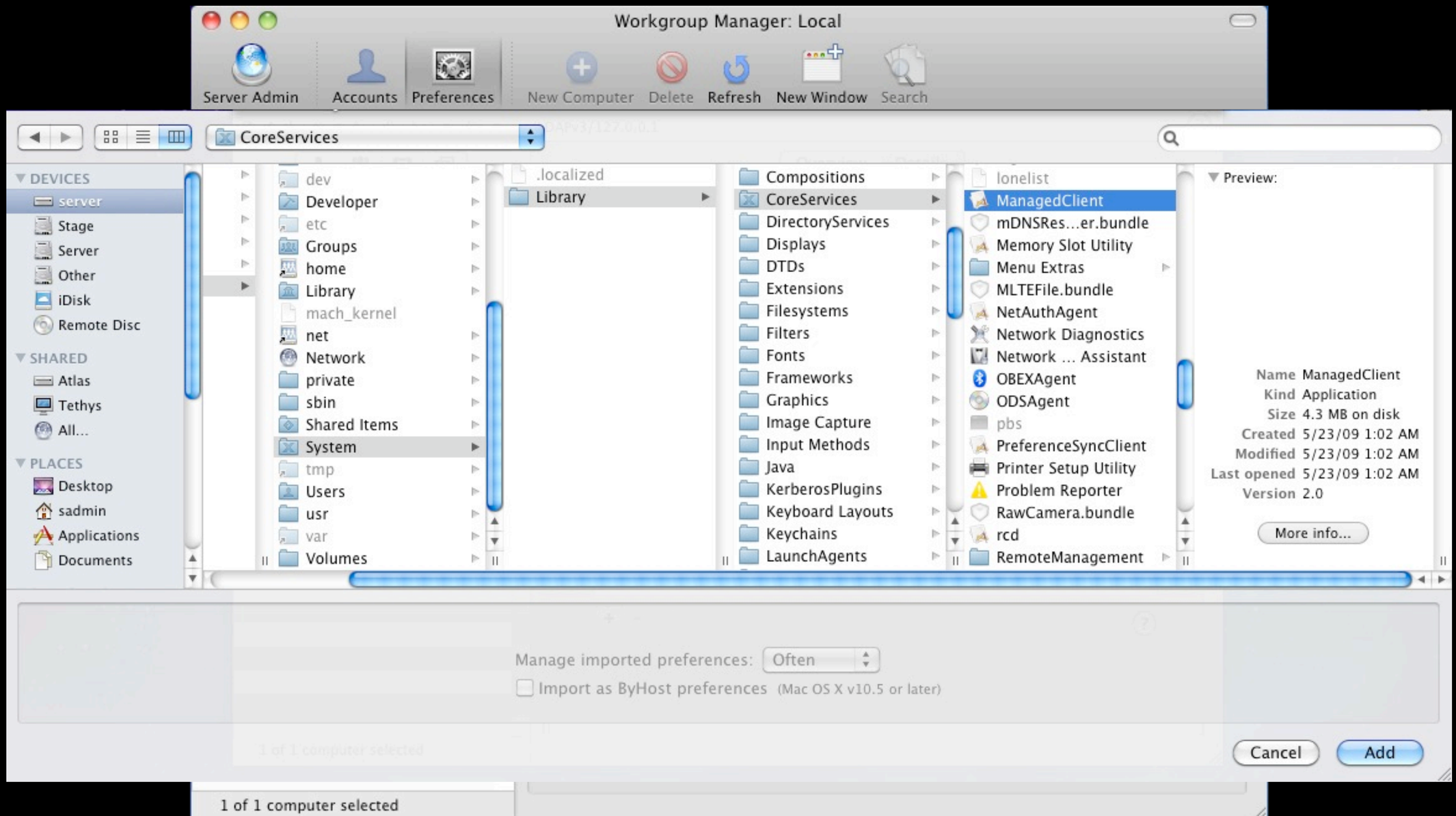
Arnaih Bringel
Consulting Engineer

Folder Redirection for Network Homes

- Mac OS X stores everything in the users' home directories
- Including caches in ~/Library/Caches
- Lots of traffic at login and application launch
- Managed Preferencs to redirect
- Use for ~/Movies to make iMovie work



Extra Sync Rules



Folder Redirection (com.apple.MCXRedirector)

New Key | Delete | Set Default | Delete Unmatched

Name	Type	Value
▶ Once	dictionary	empty
▶ Often	dictionary	empty
▼ Always	dictionary	1 item
▼ Login Redirections	array	2 items
▼ Redirect Action Info	dictionary	3 items
Action	string	deleteAndCreateSymLink
Destination Folder Path	string	/tmp/%@/Library/Caches
Folder Path	string	~/Library/Caches
▼ Redirect Action Info	dictionary	3 items
Action	string	renameAndCreateSymLink
Destination Folder Path	string	/Users/Shared/%@/Movies
Folder Path	string	~Movies

Creates and removes symbolic links from folders in the user's home to other folders. User must have the proper privileges to access the target folder.

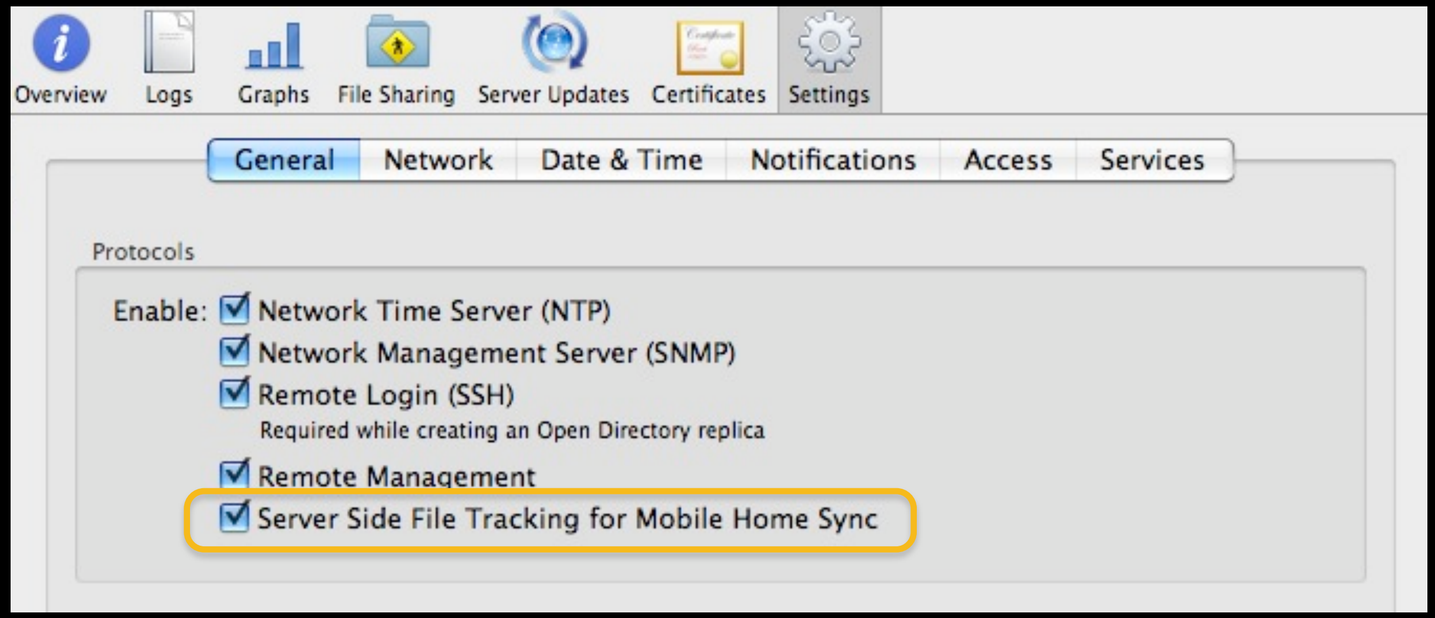
Indicates that an item does not match the preference manifest

Done | Revert | Apply Now

Often	dictionary	empty
Always	dictionary	1 item
▼ Login Redirections	array	2 items
▼ Redirect Action Info	dictionary	3 items
Action	string	deleteAndCreateSymLink
Destination Folder Path	string	/tmp/%@/Library/Caches
Folder Path	string	~/Library/Caches
▼ Redirect Action Info	dictionary	3 items
Action	string	renameAndCreateSymLink
Destination Folder Path	string	/Users/Shared/%@/Movies
Folder Path	string	~Movies

Server-Side Tracking

- Uses fsevents to track file changes on the server
- Client requests changes from server and builds list of changes
- Better than scanning the home share
- Setting in Server Admin
- TCP port 2336


Overview
Logs
Graphs
File Sharing
Server Updates
Certificates
Settings
General
Network
Date & Time
Notifications
Access
Services
Protocols
Enable:
Network Time Server (NTP)
Network Management Server (SNMP)
Remote Login (SSH)
Required while creating an Open Directory replica
Remote Management
Server Side File Tracking for Mobile Home Sync

FileVault

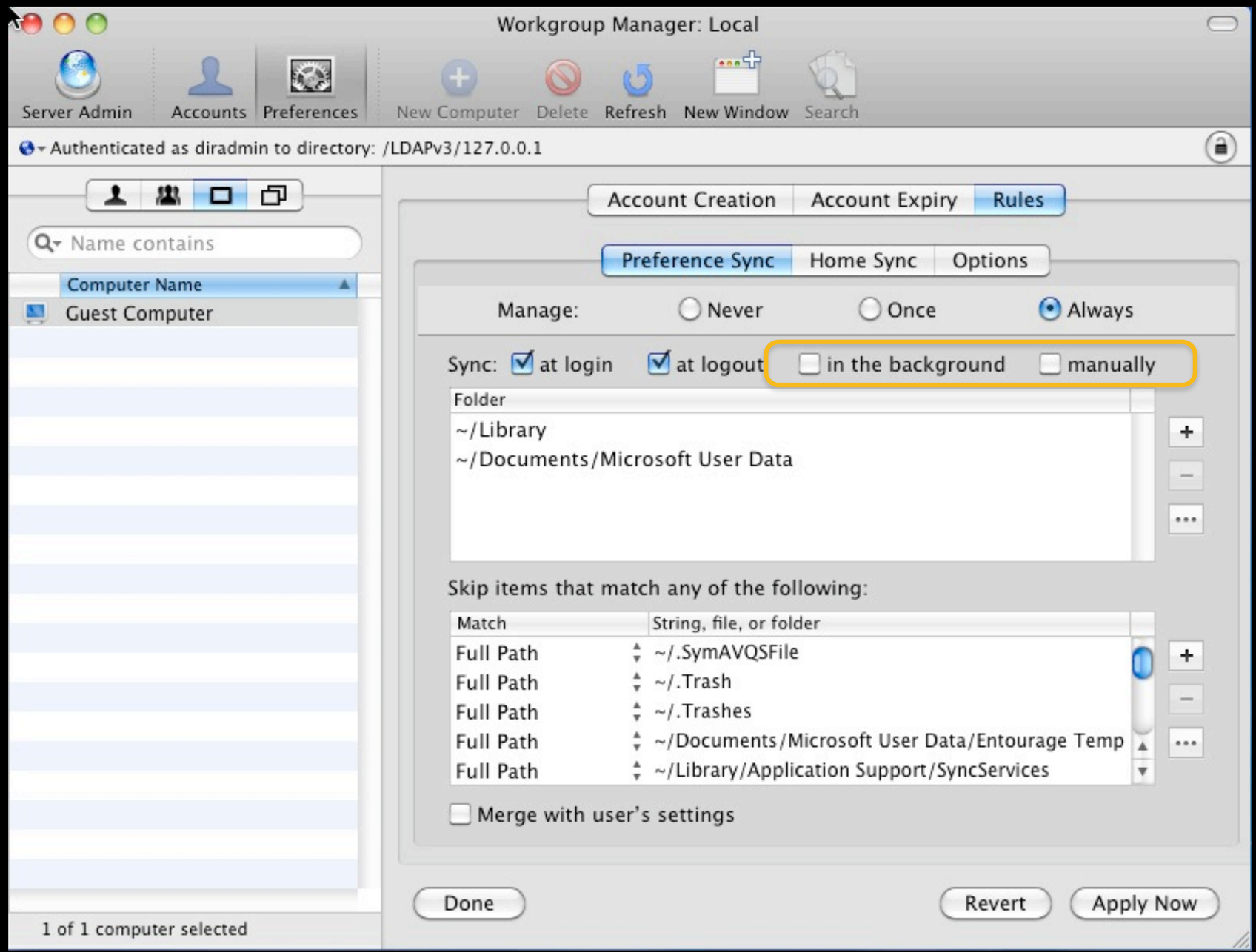
- With all flavors of mobile accounts
- Master password required
- Enforce usage with Managed Preferences
- Quotas optional
  - From server quota
  - Arbitrary quota

Multiple “Guests”

- Alternative to computer groups management
- Differentiate user experience
- Use nonsyncing mobile accounts
- Expire after zero days
- Use local template as the source
- Don’t complete sync before expiring

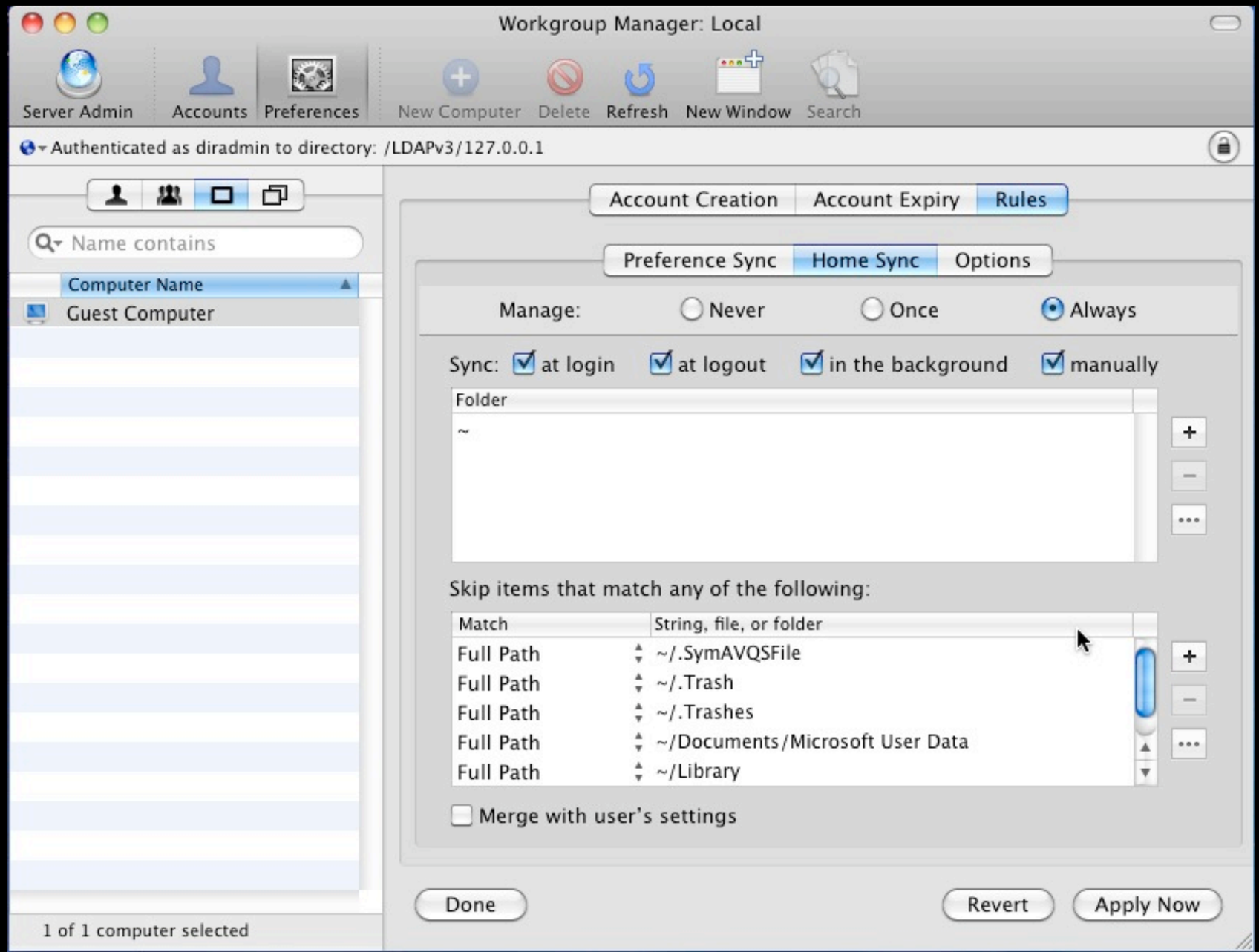
New Sync UI

New


Workgroup Manager: Local
Server Admin
Accounts
Preferences
New Computer
Delete
Refresh
New Window
Search
Authenticated as diradmin to directory: /LDAPv3/127.0.0.1
Name contains
Computer Name
Guest Computer
1 of 1 computer selected
Account Creation
Account Expiry
Rules
Preference Sync
Home Sync
Options
Manage:
Never
Once
Always
Sync:
at login
at logout
in the background
manually
Folder
~/Library
~/Documents/Microsoft User Data
Skip items that match any of the following:
Match
String, file, or folder
Full Path
~/.SymAVQSFile
Full Path
~/.Trash
Full Path
~/.Trashes
Full Path
~/Documents/Microsoft User Data/Entourage Temp
Full Path
~/Library/Application Support/SyncServices
Merge with user's settings
Done
Revert
Apply Now

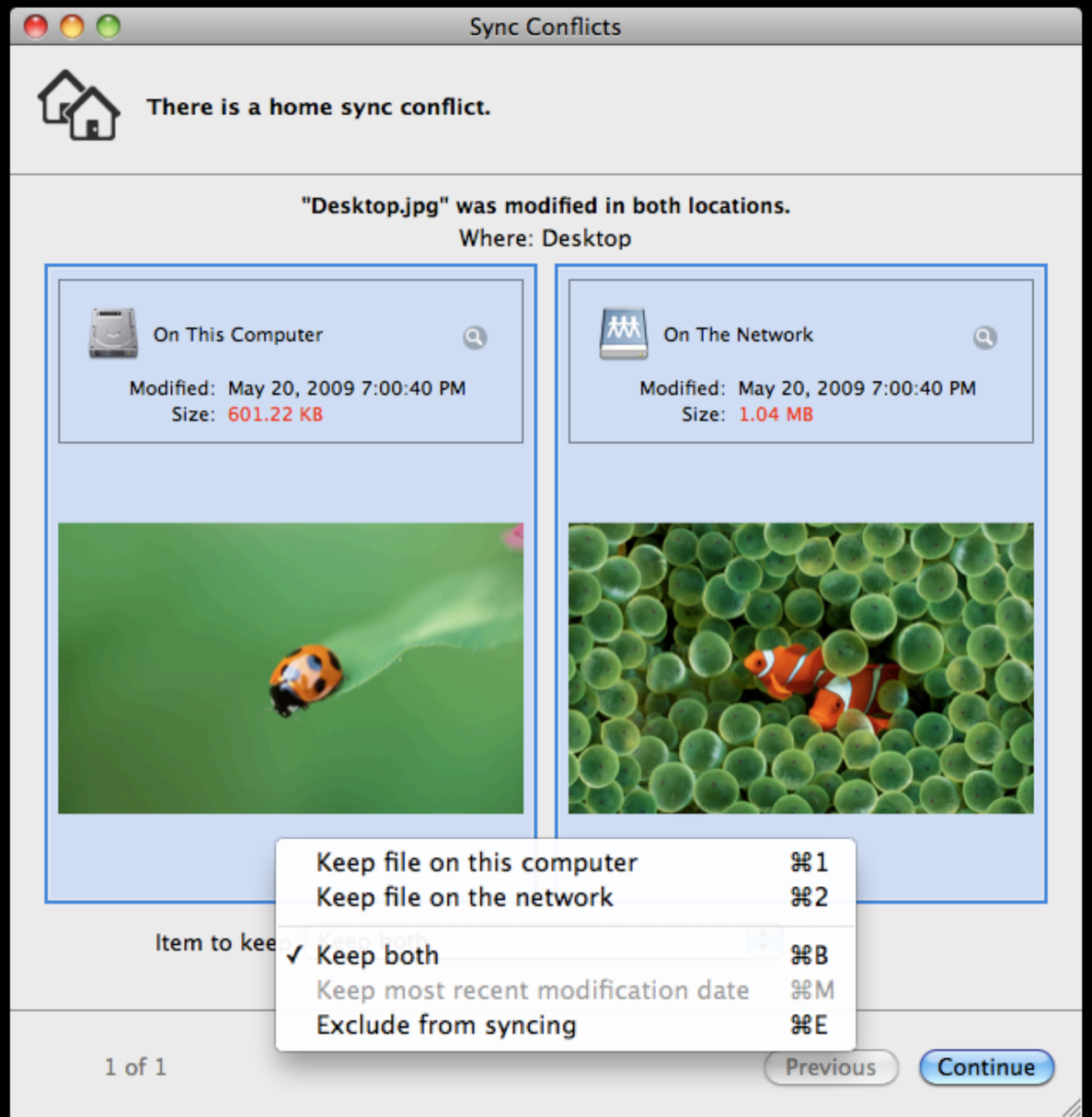
New Sync UI

New

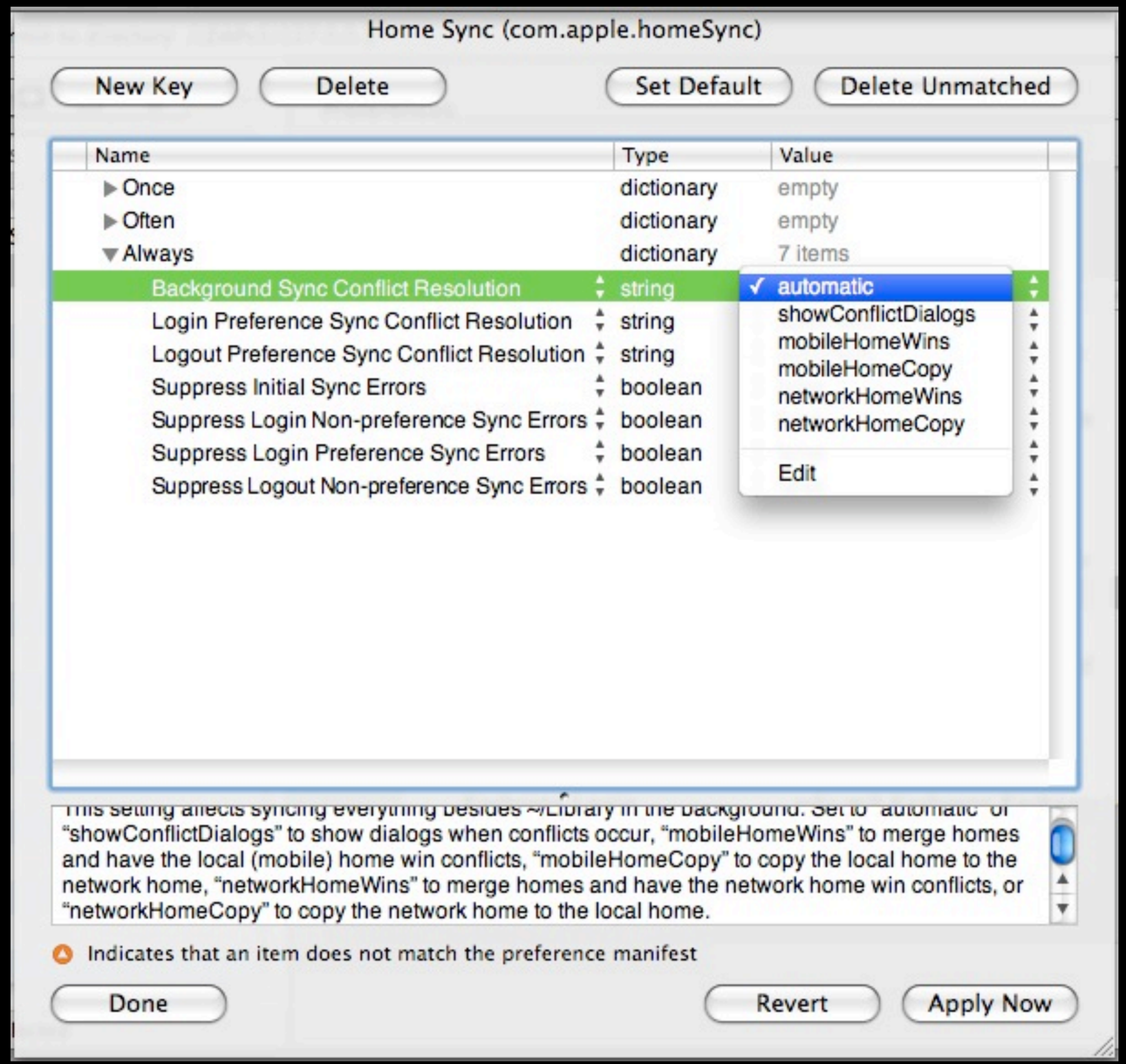

Workgroup Manager: Local
Server Admin
Accounts
Preferences
New Computer
Delete
Refresh
New Window
Search
Authenticated as diradmin to directory: /LDAPv3/127.0.0.1
Name contains
Computer Name
Guest Computer
1 of 1 computer selected
Account Creation
Account Expiry
Rules
Preference Sync
Home Sync
Options
Manage:
Never
Once
Always
Sync:
at login
at logout
in the background
manually
Folder
~
Skip items that match any of the following:
Match
String, file, or folder
Full Path
~/.SymAVQSFile
Full Path
~/.Trash
Full Path
~/.Trashes
Full Path
~/Documents/Microsoft User Data
Full Path
~/Library
Merge with user's settings
Done
Revert
Apply Now

Conflict Resolution

New



Conflict Resolution



Name	Type	Value
▶ Once	dictionary	empty
▶ Often	dictionary	empty
▼ Always	dictionary	7 items
Background Sync Conflict Resolution	string	automatic
Login Preference Sync Conflict Resolution	string	
Logout Preference Sync Conflict Resolution	string	
Suppress Initial Sync Errors	boolean	
Suppress Login Non-preference Sync Errors	boolean	
Suppress Login Preference Sync Errors	boolean	
Suppress Logout Non-preference Sync Errors	boolean	

Synchronization Rules—Sync or Swim

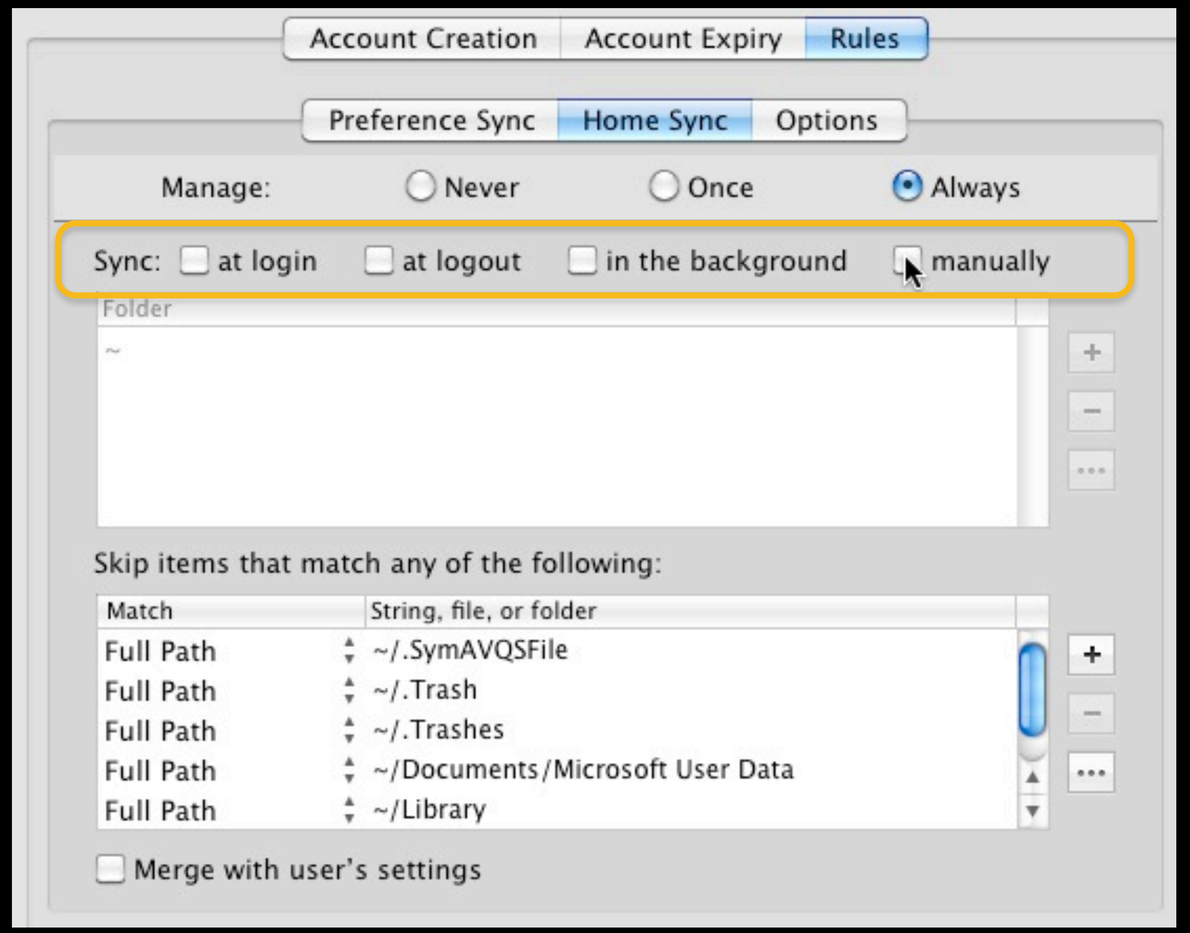
- Setup rules by folder
  - e.g., synchronize ~/Document and ~/Desktop
  - e.g., do not synchronize ~/Movies, ~/Pictures and ~/Music
- Do not exclude by file extension
  - e.g., *.mp3 or *.mov
  - Applications like iMovie or Keynote (’08) store data in packages
  - Package contents will then be selectively synchronized, breaking the document

Background Sync

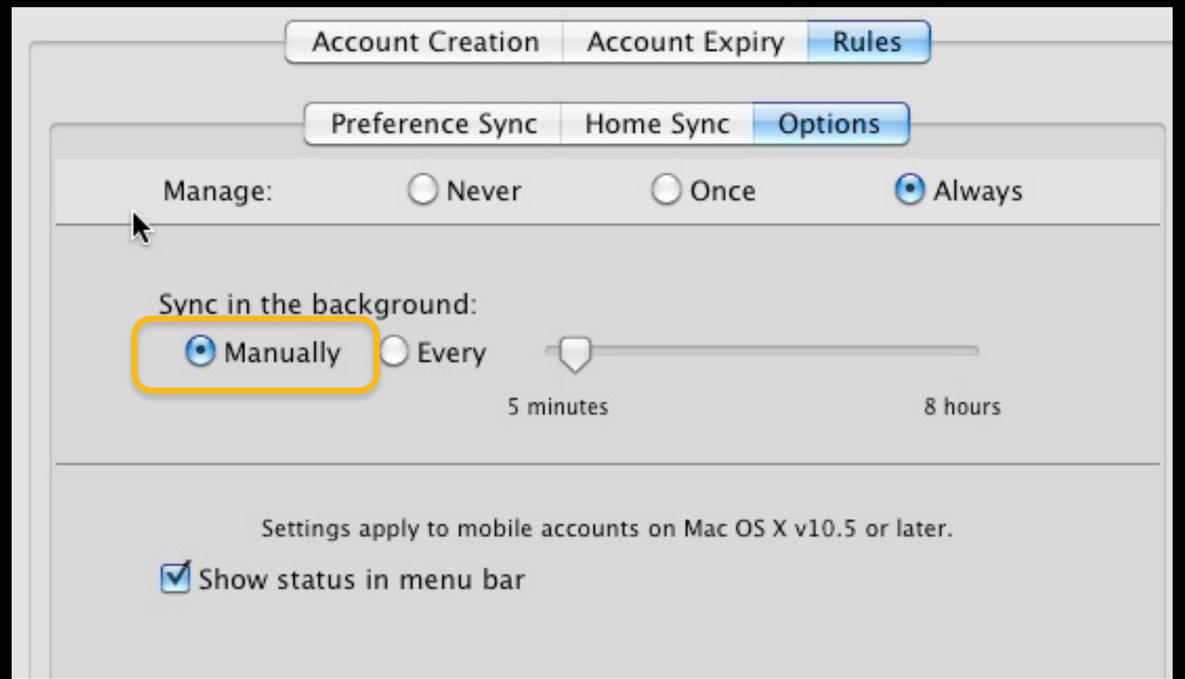
- Shorter background synchronization cycles can actually lessen server load
  - Especially in periodic lab /classroom deployments
- Manual Sync another option (train users)
- Train users
  - To logout (occasionally)
  - To know the rules and backup/burn other data

How to Not Sync

How to Not Sync



Not Syncing—Done Right



App Wrangling

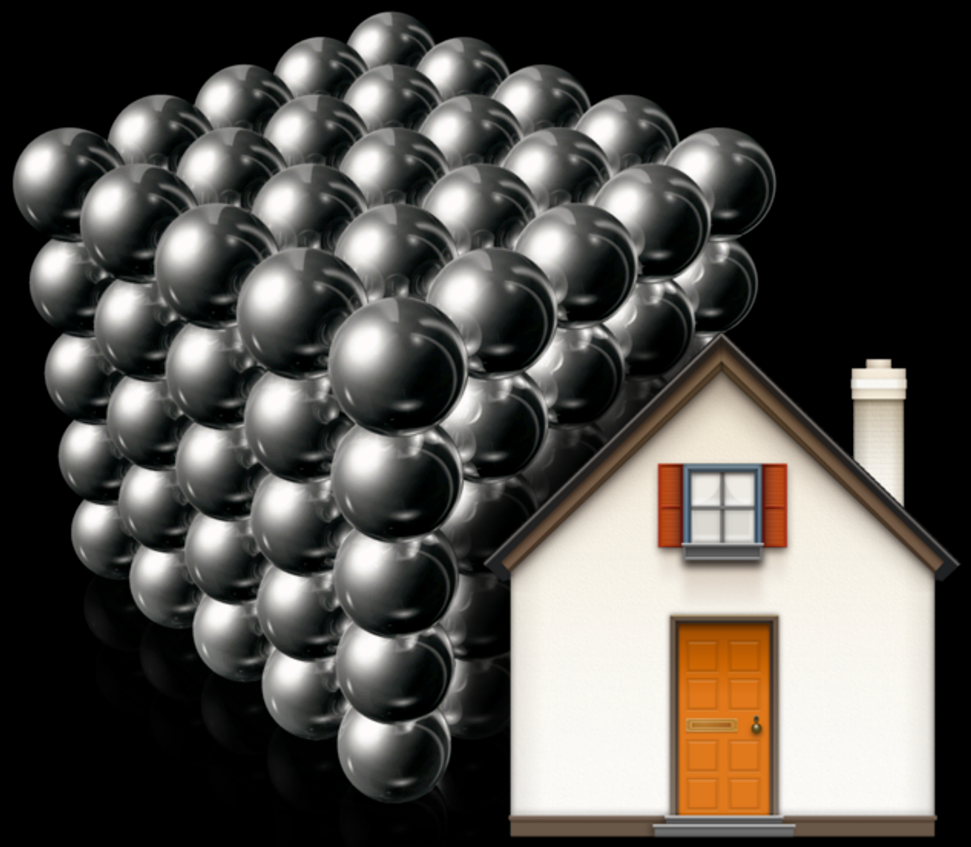
Not all applications play nice

- Firefox
  - Does not use/respect managed client settings
  - Manage with user template

App Wrangling

Not all applications play nice

- Entourage
  - Uses a large binary database for storage
  - Ignore from sync rules (IMAP will take care of sync for email)
- Parallels and VMware
  - Large binary VM images, exclude from sync



Xsan Homes

It depends…

- Network home directories work
- Portable home directories
  - MDC is bottleneck
  - Xsan 2.1
    - Does not support fsevents, no server-side file tracking
  - Xsan 2.2
    - Servers will only track their own changes
- Xsan < direct attached

Demo:
Convert Local Account to Mobile

When moving into a mobile home is an upgrade

Home Directory Best Practices

Dave Douglas
Systems Engineer

Home Directory Best Practices

Dave Douglas
Systems Engineer

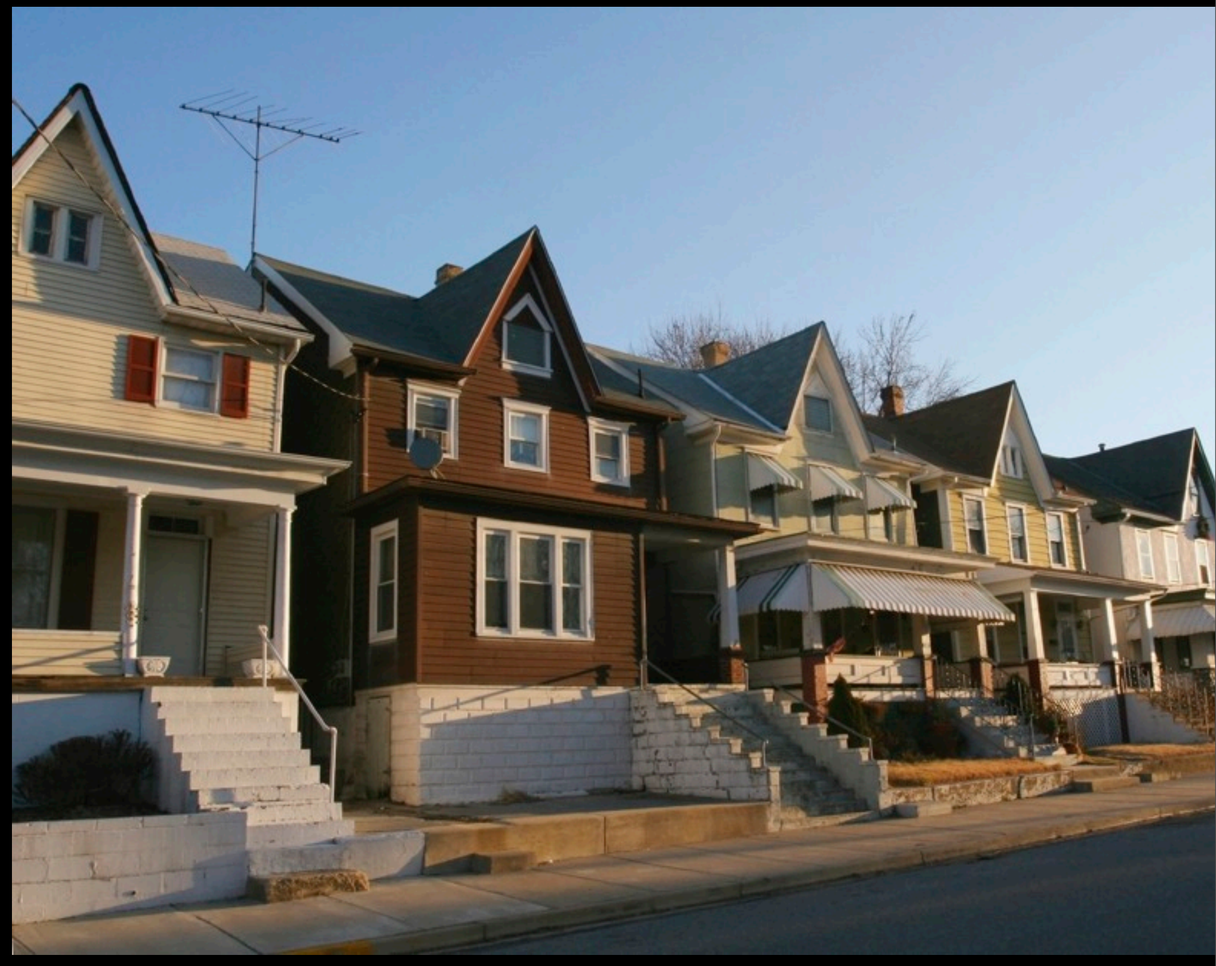
Guest Accounts

Wilmington, MS

- 2176 students
- 3 Xserves
- 400 Macs
- Wired and wireless networking

Wilmington MS

- Large outreach to non-English speaking community
- Needed to provide easy kiosk access to computers after school
- Easy to manage the user experience with MCX



Mobile Accounts

King, MS

- 2500 total students
- 750 Macs
- 400 students in magnet program
- 2 Xserves
- Wired and wireless

King, MS

- Heavy usage of iLife
- iMovie
- iPhoto
- Wanted exceptionally fast logins
- Needed everything to work even if the network goes down

Redirected Accounts

Monroe High School

- Switcher school
- Switched platforms over summer 2008
- 550 Macs
- 2400 students
- Wired
- 5 Xserves

Monroe High School

- Didn’t have capability to educate users on PHD sync errors
- Was accountable to backup user files
- Most resembled their Windows deployment

Portable Home Directories

Wilmington MS

- 93 faculty
- 3 Xserves
- 93 Macs
- Wireless wetworking

Wilmington MS

- Teachers take laptops home
- Desire to backup critical user data via portable homes -> time machine
- Teachers cross-train between laptops and desktop units in central lab

External Accounts

Garfield High School

- 4000 users
- 330 Macs
- 500 students using external accounts
- 2 Xserves

Garfield High School

- Manually formatting USB drives to HFS+
- 100Mb network
- Did not have large supply of centralized storage
- Did not want to be responsible for backing up user data
- Needed fast logins while keeping user data off the internal hard disk

Demonstration: Nondomain External Accounts

Do try this at home...

More Information

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WWDC09